

Ageing with type 1 diabetes: Current and emerging issues

Recent advancements have improved the management of type 1 diabetes, and life expectancy continues to improve (Yang et al, 2024). In England, 15.5% of those with type 1 diabetes are now over the age of 65 years (over 40 000 people) and 2.7% are over 80 (over 7000 people) (NHS England, 2024).

This represents a tremendous achievement for the diabetes community, particularly for individuals living with the condition, as successful type 1 diabetes care is reliant upon intensive self-management. An older population will inevitably encounter more of the challenges of ageing, including increased comorbidity, and physical and cognitive impairment. Those who have lived for an extended time with diabetes may be at increased risk of these challenges compared to those without diabetes (Sinclair et al, 2008).

Unfortunately, there is limited research into how best to manage type 1 diabetes through the challenges of ageing (Golding et al, 2024). This article aims to highlight just some of the key issues that require further attention in the realm of type 1 diabetes in the older adult.

Current approach to management

People age at different rates, and so age itself is not the best predictor of survival. Instead, measures of frailty status are used, commonly defined as: “the physiological decline and loss of reserve across organ systems that leaves an individual vulnerable to stressors which trigger deteriorations in health or functional status” (Fried et al, 2001; Chen et al, 2014). Many changes can occur within an individual as frailty progresses, including reductions in weight, muscle mass, appetite and physical activity, all of which can impact insulin sensitivity, complicating diabetes management and placing the individual at increased risk of the consequences of hyper- or hypoglycaemia.

Conceptually, there are two key differences that explain the subtle difference in approach towards the older adult with type 1 diabetes. First, there is recognition of the reduced life span associated with the progression of frailty, and the consequent reduced time to develop the long-term complications of diabetes. Second, evidence suggests that hypoglycaemia is associated with adverse outcomes in older adults, including falls, fractures, hospitalisations and overall mortality (Mattishent and Loke, 2016).

As a result, guidelines promote a gradual relaxation of glycaemic targets to prioritise the avoidance of hypoglycaemia as frailty progresses (International Diabetes Federation, 2013; American Diabetes Association [ADA] Professional Practice Committee, 2022). This can be difficult to instigate, as it involves convincing the user to move away from tight glucose targets, something they will have been striving towards for decades, and to which they will rightly attribute their longevity.

This approach, originally designed for use in type 2 diabetes, is widely adopted for older adults living with type 1 diabetes and frailty, but no studies have investigated whether use of these altered targets is associated with any adverse consequences (Golding et al, 2024). The risks of raising glycaemic targets are potentially greater for an individual with type 1 diabetes, owing to the threat of diabetic ketoacidosis. Research that investigates the impact of these targets would be useful.

Loss of independence with diabetes management

A major source of anxiety for many living with type 1 diabetes is the potential consequences of losing independence with self-management. This can occur for a variety of age-related reasons, including dexterity issues or cognitive impairment. Many older adults with type 1 diabetes will have become experts in their own diabetes, having



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developed individualised coping strategies for decades, and the idea of handing over diabetes management to a carer can be incredibly stressful.

This can also place an increased burden on the person adopting the caring role (Sinclair et al, 2010; Bendixen et al, 2018). Resource, education and support regarding diabetes for carers in this position are vital to enable them to perform this important role.

The role of community nursing teams

For those who do not have someone able to adopt the management of their diabetes, alternatives must be found. Where individuals prefer to remain at home, the obvious next step is to involve district nursing teams.

In older adults with type 2 diabetes, it might be possible to de-escalate insulin therapy to tablets or use a once-daily basal insulin to maintain adequate control within the frailty-adjusted glycaemic targets. However, type 1 diabetes management necessitates insulin, and adequate management requires a minimum of two insulin doses (for a twice-daily mixed insulin). Even this carries significant risk, as it requires a rigid oral intake and insulin timed with meals, both of which can be difficult to achieve with visiting nurses. The minimum requirement for two daily visits is resource intensive for already busy district nursing teams and, in some areas, community teams are already not able to accommodate this.

The role of care/nursing homes

Owing to the difficulty in providing community care to those with type 1 diabetes, individuals who find themselves unable to self-manage and without a suitable carer may face requiring residential care at an earlier than anticipated stage to accommodate their diabetes management.

However, particular concern has been highlighted about the management of type 1 diabetes in care homes, where staff may be more familiar with type 2 diabetes (Dhaliwal and Weinstock, 2014; ADA Professional Practice Committee, 2022). Education to increase the awareness of type 1 diabetes in care homes is vital to ensure potential errors relating to the timing and administration of insulin are minimised. Additional tools, such as

greater use of technology or ketone testing) could be used as an early identifier of illness (Diabetes UK, 2010; Brooks and Chakera, 2019). For this to be effective, however, further enhanced education would be required for care home staff, which will be difficult to put in place in an under-resourced sector that already faces numerous challenges, including in recruitment and retention that results in a high turnover of staff. One care-home resident will rely on a wide network of carers, and educating them all to the same standard will pose a challenge.

Technology

In recent years, there has been an explosion in the availability of diabetes technology. Most people in the UK with type 1 diabetes, including older adults, now use continuous glucose monitoring (CGM), and there is a planned expansion of hybrid closed-loop therapy (NICE, 2023). This technology could hold some of the answers for this vulnerable group, but ensuring equity of access will require large-scale education of individuals, their carers and nursing teams. It is important that older adults are not forgotten as technology is rolled out, as the challenges they face, as described above, are among the most pressing issues facing the diabetes community. Certainly, the way in which the older adult community has adopted CGM technology should serve as an example of what can be achieved, and the impact that it can have.

Conclusions

The fact that individuals with type 1 diabetes are now living longer is a huge success, which should be celebrated. However, it brings new challenges, including how to manage type 1 diabetes in older adults. As time goes on, more people with type 1 diabetes will reach older ages and these issues will only become more prevalent. It is important that these challenges are addressed, as growing older is a fact of life that all will one day face. ■

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